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Titolo	Practical Implementations of Additive Manufacturing Technologies // Shashanka Rajendrachari, editor
Pubbl/distr/stampa	Singapore : , : Springer, , [2024] ©2024
ISBN	981-9959-49-7
Edizione	[First edition.]
Descrizione fisica	1 online resource (338 pages)
Collana	Materials Horizons: from Nature to Nanomaterials Series
Disciplina	621.988
Soggetti	Additive manufacturing
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	A Brief History of Additive Manufacturing Technique with Future Trend -- Recent Developments in Additive Manufacturing -- Challenges in Additive Manufacturing Technology: Post Processing, Design and Material's Selection -- Different Types of Additive Manufacturing Methods, their Limitations and Advantages -- Nano-Structured Materials in Additive Manufacturing: Synthesis, Properties, and Applications -- Ceramic Based Additive Manufacturing -- Metal Based Additive Manufacturing -- Polymer Based Additive Manufacturing -- Biomaterial Based Additive Manufacturing -- Hybrid Nanomaterials Based Additive Manufacturing -- Composites Based Additive Manufacturing -- Smart Materials Based Additive Manufacturing -- Additively Manufactured 3D Printed Batteries and Supercapacitors -- Additively Manufactured Electrochemical and Biosensors -- Additively Manufactured Aircraft Interior Components, and Rocket Engines Components -- Additively Manufactured Automobile Components -- Additively Manufactured Medical Implants -- Applications of Additive Manufacturing in Construction and Building Industries -- Applications of Additive Manufacturing in Biomedical and Sports Industry -- Additive Manufacturing: Environmental Impact, and Future Perspectives -- The Economic Impact of Additive Manufacturing Industries -- General Job Opportunities for the Graduates, Postgraduates and PhD Graduates in Additive Manufacturing Industries.
Sommario/riassunto	This book gives in-depth information about evolution of additive

manufacturing from a few decades to the present explaining how the technology has been improved with time and its practical implementation of the technology in various applications and industries. It describes the different types of additive manufacturing methods used to prepare materials and their advantages, followed by the limitations. This includes the fabrication of metal, polymer, biomaterial, hybrid nanomaterial, smart material, and ceramic materials using additive manufacturing methods used in many applications such as 3D printed batteries, supercapacitors, electrochemical sensors, biosensors, aircraft interior components, rocket engines components, automobile components, and medical implants. It also describes advanced applications of additive manufacturing materials in the construction, biomedical, and sports industries. In addition, the book also deep dives into the environmental impact and economic benefits of additive manufacturing industries. A special chapter is included to give an overview on the general type of job opportunities for engineering graduates and research scholars seeking to find employment in additive manufacturing companies. In short, the content of this book targets primarily researchers, engineering students (bachelors and masters), and industrial engineers.

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